

Translation.

On Monday the 9th of the Mithúna, dark half Sankránti in the 4th anka of the victorious reign of the warrior Kapileśvara Deva Mahárāja, at camp Kṛitibás during the inner pújá leisure, it was ordered in the presence of Raiguru Básu Máhápátra and Bhuvaneśvara Máhápátra who caused (this) to be inscribed :—All the kings in my Orissa kingdom should work for the good of the (paramount) sovereign, should keep virtuous ways, should not remain in bad ways. If they act badly towards the sovereign, they will be expelled from the kingdom and all their property confiscated.

Note.

These two inscriptions are on the right jamb of the doorway leading to the porch of the Bara Deúl at Bhuvaneśvara. They are inscribed just in the centre at a man's height. No corresponding inscriptions are to be found on the left jamb.

The general remarks made in the Jagannátha inscriptions apply, *mutatis mutandis*, to these also. The dates do not seem correct. The tithis of the years in question do not fall on the week-days stated.

The Topography of Old Fort William.—By C. R. WILSON, M. A.

In the present paper I propose to lay before the Society the results of certain excavations made during the last four months of the year 1891 and the first four months of the year 1892, on the site of old Fort William, Calcutta.

These are not the first excavations which have been made at this spot. In 1883 Mr. R. R. Bayne, while erecting the East India Railway Offices in Fairlie Place, came across considerable portions of the old fort walls. He reported his discoveries to the Society in a paper which will be found in the *Journal* for 1883, Vol. LII, Part I, No. 11.

The general position of the old fort with its adjacent warehouses is well-known. It stood on the ground now occupied by the General Post Office, the New Government Offices, the Custom House, and the East India Railway House. The warehouses built along the south side of the fort skirted Khoila Ghat Street. The north side was in Fairlie Place. The east front looked out on Clive Street and Dalhousie Square. Behind it was the river which then flowed further east than at present.

The fort was in shape an irregular tetragon. Its walls were built of small thin bricks strongly cemented together.

The old Fort. According to Orme, "its sides, to the east and west extended 210 yards, the southern side 130, and the northern

side 100. It had four bastions mounting each ten guns. The curtains were four feet thick, and like the factory of Cossimbazar, terraces, which were the roofs of chambers, formed the top of the ramparts; and windows belonging to these chambers were in several places opened in the curtains. The gateway on the eastern side projected, and mounted five guns, three in front and one on each flank towards the bastions. Under the western face, and on the brink of the river, was a line of heavy cannon mounted in embrasures of solid masonry; and this work was joined to the two western bastions by two slender walls, in each of which was a gate of pallisadoes. In the year 1747, warehouses had been built contiguous to the southern curtain, and, projecting on the outside, between the two bastions, rendered them useless to one another. However the terraces of these warehouses were strong enough to bear the firing of three pounders which were mounted in barbets over a slight parapet." There were also blocks of central buildings within the fort. It had two gates on the river side besides that on the east front.

When in 1883 Mr. R. R. Bayne began to dig at the corner of Fairlie Place for the purpose of laying down the foundations of the East India Railway House, he almost immediately came across remains of old walls built of small thin bricks such as have long ceased to be used. These were the walls of the old fort. Mr. Bayne followed up the indications thus found, and in the end was able to put together an almost complete ground plan of the north end of the fort. As a detailed description of these discoveries has been already placed before the Society, it will be quite unnecessary for me to attempt to give any further account of them here. Nor do I wish at present to offer any criticisms upon the suggestions and theories which naturally occurred to Mr. Bayne in connection with his discoveries. I shall at once proceed to set forth the results which have been obtained since 1883 by a persistent search of the records and by recent excavations made on the spot.

The first great step towards completing the work so well begun by Mr. R. R. Bayne was taken by Mr. T. R. Munro, who discovered in the British Museum a copy of a large map of old Calcutta on the scale of 100 ft. = 1 in., dated 1753. The map, it appears, was drawn by a Lieutenant Wells of the Company's Artillery, and was designed to show a projected new fort, but it also shows the old fort in great detail. A photograph of this plan was presented to the Asiatic Society in 1889 by Mr. Munro, and it is with this photograph in my hands that I have been able to carry out extensive excavations of the site of the old fort in the years 1891 and 1892 and thus complete the work of defining the topo-

graphy of the place. The plan, it is true, is not quite accurate, but it is infinitely superior to the little rough sketch of the fort found in Orme's history, which was all Mr. Bayne had to go upon.

The plan suggested a further searching of the records, both here and at home, to see if they could cast any further light either upon the plan itself, or on the projected new fort of 1753, or on the state of the old fort generally. Through the kindness of Mr. Forrest, I was enabled to see such records bearing on the subject as are now preserved in the Imperial Library at Calcutta, but I found that they were very meagre. Dr. Busteed, however, most generously devoted a considerable amount of his valuable time to looking up the records at home, and has furnished me with a complete list of all the passages to be found in the extant records which have any bearing whatever on the old fort, and on the question of improving it, or superseding it, which seems to have been so often discussed during the four or five years which preceded the tragedy of the Black Hole. These extracts are provokingly incomplete. They refer to fuller documents, but these fuller documents are not now forthcoming, having been all destroyed. Four plans are mentioned, *viz.*, Colonel Scott's, Captain Jones's, Simson's and Plaisted's, but none of these could be found by Dr. Busteed at the India Office. It is only by some lucky chance that a duplicate copy of Scott's, or Wells's plan found its way into the King's library at the British Museum. As, however, these extracts bring before us very vividly the circumstances under which the plan was drawn up in 1753, I will here give them in full, together with Dr. Busteed's valuable comments on them, before proceeding to speak of the plan itself.

1. From President and Council, Bengal, to the Court of Directors,
Extracts. Scott and Wells. the 28th February, 1754.

Colonel Scott having laid a project before the Board for securing this settlement against any attack from a country force which, in the present juncture, ought to be guarded against, and as we imagine the expense of it will not be very considerable, we have complied with his proposal and directed him to set about it as soon as possible. A copy of that project we transmit yr. Honours in this packet as we did not chuse for the sake of secrecy to enter it after the consultations.

2. From President and Council, Bengal, to the Court of Directors, the 7th September 1754.

When Col. Scott proceeded to the coast he requested we would permit Lt. Wells to carry on the works he had planned at Perrin's in

his absence which we accordingly complied with. * * * *. Col. Scott in consequence of Mr. Saunders and Council's¹ request for relieving Major Lawrence in the Field, left us on the 18th March, but it is with concern we informed yr. Hons. he died at Madras on 12th May of a violent fever.

3. From the Bengal Government to Wm. Watts at Moorshedabad, the 22nd August 1755.

It has hitherto been very unfortunate to this Settlement that every gentleman, who has had capacity or been appointed by our employers to fortify this place, have not lived even to make a beginning on the plans proposed,² *we have therefore agreed to wait our Masters' last commands by this year's shipping*, when if they are absolute and the situation of affairs in Europe portends war we must employ those who have the most experience and knowledge to execute plans of fortification, and this we shall put in practice without showing any diffidence to the right we have of securing our Settlement.³

4. A letter, signed by Messrs. Drake and Manningham, to the Court of Directors, the 3rd September 1755.

The death of Col. Scott put a check to our pursuing his plan for securing this settlement from any attack of the country forces with much alacrity *as we were cautious of laying out much money until yr. Honours signified yr. approbation of that work* which shall now be set about in as expeditious a manner as the season of the year will permit our carrying it into execution. Here we must remark that the Go-

¹ The Council of Madras. H. E. B.

² See *Long's Selections* No. 166.

³ Perhaps it would have been wiser if they had shown some "diffidence" now after having for so long neglected their defences, even in the face of repeated orders from home. The new Nawáb in the following year opened their eyes on this subject. However, to give the Fort William Government their due, they had consulted Watts, the chief at Cossimbazar, as to the prudence of seeking permission from the Murshidábád Government before they took their defences in hand. They were prepared to conciliate the Nawáb and to resort to the customary bribery to him and his ministers. Watts opposed the idea, chiefly because the Nawáb was really so rich that no bribe which Calcutta could afford would be likely to convert him if unfavorably inclined; he urged moreover that the precedent of asking and paying for such permission might prove a very embarrassing one in the future, and that if the Nawáb should refuse, the English would be worse off than ever. On the whole Watts advised them to go on with the fortifications and say nothing, and, if in the meantime exception should be taken by the Murshidábád Court, Watts was not without confidence that he could prevail upon the Minister "Huckambeg," for a consideration, to divert the possible anger of the Nawáb. Events did not justify this confidence. H. E. B.

vernment⁴ has not attempted to frustrate that design though it has a formidable appearance.

5. From President and Council, Bengal, to the Court of Directors, the 11th September 1755.

We shall pay due regard to yr. orders in regard to the fortifications Col. Scott projected for the defense of the place against a country enemy which are carrying on agreeable to his instructions, but not yet near finished. Mr. Wells who was recommended by the Colonel to overlook those works being dead, we have directed Mr. Barthw. Plaisted to see them executed: for what may relate further to those works or any others that may be found necessary for the defense of the settlement we beg leave to refer yr. Honrs. to the gentlemen you have entrusted on that head.⁵

6. From President and Council, Bengal, to the Court of Directors, the 8th December 1755.

Mr. Wm. Wells, 2nd Lieut. of the Train under whose inspection the works at Perrin's were carrying on, departed this life on 8th August. In his room Mr. B. Plaisted took charge of those works jointly with Mr. O'Hara. They have our directions to execute the plan Colonel Scott left behind him.

7. On August 4th, 1755, Captain Jasper Leigh Jones of the Artillery addresses a letter to the President and Council, Fort William, about the state of the defences of Calcutta.⁶

Captain Jones. and Council, Fort William, about the state of the defences of Calcutta.⁶

It is with pleasure I hear the Hon'ble Court of Directors have earnestly recommended unto you an inspection in general regarding the Buildings Military (*sic*) and Fortifications. * * * I think it is my duty to study anything for the good of the service. * * * [He enlarges on this duty theme and deprecates the circumstance that he is armed with so little authority to initiate or take up any measures for the defending of a place whose safe custody he considers himself responsible for in a great degree. He proposes to relieve his conscience by giving Government his opinion as to the condition of their so-called defences before he betakes himself to the Coast where he is next for duty. He then goes on to speak of Col. Scott's project.] In the

⁴ The Government of Murshidábád. H. E. B.

⁵ Probably Drake and Manningham, as those two only sign the letter to the Court of the 3rd September 1755. H. E. B.

⁶ "Bongal Consultations," 1755-56.

method I perceive the plan in regard to the inward works may by the order of the Hon'ble Ct. of Ds. be put into execution, but as there is no positive order to go to work on that, it is necessary now we should think for the good of the place we are entrusted with as well as the property of our proprietors and our Hon'ble Masters who employ us. [As there is a probability of a French war in Europe, he counsels that provision for that contingency should be the chief object in view: he considers that there is little or nothing to fear from a 'country enemy' as 'their interest for our continuation will be sufficient']. Provided a general war which is what we have to expect, it is natural to expect the enemy will attack this place, and in order to do this send some ships of war into the river whose coming near the town must be carefully avoided. It is certain the Hon'ble Ct. of Ds. has been always of opinion that if ever Calcutta was attacked it must be by some means from the river, and they, like prudent, experienced and good Masters, have provided their servants in time with the best guns they could procure which by their nature are for defense and not for sale, lying on the warfe unmounted from their landing to this day.

How far we have regarded their hint I can't say, as we have neither a carriage to mount any of them on, or even a gun already mounted in the garrison fit for service, and am very sorry I must be obliged to confess we seem to look more like a ruined and deserted Moor's fort than any place in possession of Europeans, much less a principal Settlement [There is more to the same purpose; his main recommendation is to repair the 'Lino Wall' on the river bank, the immediate construction of fascines there as a temporary measure, the providing of vessels to be used as fire ships, and the manning of the batteries proposed by the gentlemen of the Militia Corps with trained Artillerymen intermixed with them]. What guns could be mounted on the 2 bastions by the river side ought likewise to be kept in good order with their platform and embrasures repaired, as they would be of infinite use, being so much higher than the guns of the Line Warfe Wall.

8. Captain Jones returns to the subject again on 11th Sept. 1755.⁷

Having not met with the pleasure of yr. approval in regard to my last letter to which this plan is in some measure a reference, and that it may not be misconstrued by yr. Honors, I hope you will be kind enough to give me leave to send it home, in the packet, for fear it might be thought (without an explanation) I had some views of converting the

⁷ "Bengal Consultations," 1755-56.

designs of a more perfect hand—this I hope will show I had no sinister views of my own.⁸

9. It appears from the Consultations of 24th November 1755, that Mr. B. Plaisted also furnished to Mr. Frankland “a plan he had taken of the town of Calcutta.”

10. On 25th February, 1756, a letter was addressed to Drake and Manningham⁹ by Colin Simson who thus introduces his own plan.¹⁰

Since the time I have had the honor to be appointed Engineer I have had an opportunity to examine the plan projected by Col. Scott for a fortification where Fort Wm. now stands, which appearing to be deficient in some of the things principally requisite in a fortification, I thought it my duty to represent the same to yr. Hons. that if you think proper the representation with the accompanying plan may be transmitted to the Ct. of Ds.

[He proceeds to criticise adversely Scott’s plan in many particulars.] The whole Fort when finished will be a narrow slip on the side of the River, and in order to build it, the whole north side of the Factory which contains the apartments for most of the young gentlemen in the Company’s service, the magazine for arms and military stores, shop for medicine, smith’s shop, &c., must be pulled down immediately, as also

⁸ This plan was ordered “to be sent to the Honourable Company in the box of books per *Hardwick*.” As for Captain Jones, *R. Drake Junior* and his brethren did not like to be hustled by this plain-spoken and honest man; his gloomy forebodings—too soon to be realized, but from a quarter which even he did not foresee—were most unwelcome. Like the daughter of Priam he possessed the gift of prophecy which nobody believed, and accordingly he got nothing but rebukes for his pains. “On the 4th August Captain Jasper Jones sent in a letter to the Board with his sentiments on the present fortifications of the place, and what he thought necessary for its defense in case of war. The Board being of opinion it was irregular, improper and unnecessary, we ordered our Secretary to inform him that our orders had been issued to his Superior Officer to whom he should have applied if he had anything material to offer.” Poor Jones did not go to the coast as he proposed: he died instead on the 22nd November 1755, having been overtaken with monotonous punctuality, by the “violent fever” which had already accounted for so many of those who dealt with the defence of the settlement. The Bengal recording angels said grandiloquently, in their letter to the Court of Directors, that he “demised,” and this they announced without the hollow customary formality of any expression of regret. Captain Witherington resigned in his stead, and Lieutenant Grant became a Captain. H. E. B.

⁹ The special Committee on fortifications presumably. H. E. B.

¹⁰ Letters from Bengal 1756.

the Church and Hospital; all these buildings are in constant use, they cannot be well spared, and it would be difficult to supply their place immediately.¹¹ [He repeats this drawback to Scott's plan in another part.] Before the building of the Colonel's plan can be carried on there must be pulled down immediately all the north side of the Factory, the Church, Hospital, godowns of Mr. McGuire's house, the Dockyard, and godowns of the Company's house. Whereas in order to go on with building the Square nothing need be pulled down but the outhouses of the Company's House and a small part of north-east corner of present Fort.

Simson's suggestion was 'to save most of these buildings and to erect a square fort (as by the accompanying plan) which runs from the north side of the present fort round the Church through the Tank towards the horse's Stables and thence down to the waterside between Mr. Amriott's house and that of the Company.'¹²

There is only one allusion to be found in Simson's letter to the Fort river-bastions. 'The gun wharf or low battery on the river side which is not flanked by any fire from the Fort is proposed to be left in its present situation, and as its wall projects forward from the angle of the north-western bastion towards the river, it prevents the face of that bastion from being flanked. Neither is the face of the south western bastion towards the river flanked, the line of its face running without side the opposite flank.'

I may now pass on to describe Wells's plan of the fort to which frequent allusion has been made in the foregoing extracts and of which I give a facsimile (Plate VI). The plan is preserved in the British Museum having found its way there from the King's library. It is endorsed "No. 11 Duplicate Plan of Fort William and part of Calcutta by Wm. Wells under Col. Scott drawn in 1753"; and again in another part.—"Received per Dunington, 10th October 1754." The object of the plan is to show the new fort which Col. Scott projected in 1753, but it incidentally shows the old fort in considerable detail, the scale being 100 ft. = 1 in. Looking at the plan we recognise at once the irregular tetragon with its four bastions, (α , β , γ , δ), each having embrasures for ten guns. The north curtain here measures 210 ft., the south curtain 356 ft., the east 546, the west 560. The fort has three gates, ϵ the east gate, ζ the main south river

¹¹ See *Long's Selections* No. 165. By an unfortunate misprint, "north side of the Factory" has been converted into "south side" in the *Selections*.

¹² Then the Company's Stables were beyond, *i. e.*, east of, the Hospital, and Amriott's house was just south of Douglas'. H. E. B.

gate, and η the smaller north river gate through which Suraj-ud-daula entered the fort. θ is the mound of the great flag-staff, ι is the passage joining the northern and southern divisions of the fort. $\kappa\lambda\mu\nu\pi$ are the series of rooms south of the east gate, of which the southernmost should be the Black Hole. ξ is the staircase to the south-east bastion α . ρ is the verandah in front of the chambers $\kappa\lambda\mu\nu\pi$. σ is the landing stage on which was placed the Company's crane. τ is the river wall armed with cannon and protected where necessary with palisades shown as dotted lines. Within the fort is a large central block of buildings marked in the plan as "The Factory." Hamilton calls this the Governor's House, and I prefer to use this name to indicate it, as "the factory" is more commonly used to denote the whole fort. At the same time it must be remembered that the Governor did not live here in 1753, but in the Company's House on the south side of the fort, although he still retained some rooms or offices in the south-east wing of the building for his own use. Adjoining the south-east bastion, we see the Export and Import Warehouses which, as Orme tells us, were added in 1747. Holwell speaks of them as the new, or colta, warehouses. The roofs was strong enough to carry cannon, and the south-east corner of the warehouses when thus armed seems to have been dignified with the title of the new S. E. bastion.¹³ The east gate (ϵ) was also armed with five cannon. The warehouse yard is separated from another yard to the west of it by a small zigzag wall. This yard (ω) was, I conjecture, the carpenter's yard, since it is next to the warehouses, and is conveniently situated with reference to the river. As regards the buildings on the north side of the fort, mentioned in Simson's letter of 25th February, 1756, I conjecture that $\phi\phi$ are the lodgings occupied by the young gentlemen in the Company's service, and that χ , the central building in the north division of the fort, is the armoury. The former conjecture is supported by the very nature of the ground plan of the buildings, the latter by the fact that when Mr. R. R. Bayne uncovered the foundations of χ in 1883 he found close by it pieces vitrified as if from a forge. The laboratory was situated in the east curtain¹⁴ and must have been one of the rooms $\psi\psi$. Generally the

¹³ Holwell alludes to the new S. E. bastion several times in his long letter to the Court of Directors. In section 40 he says: "That [outpost] to the eastward at the Court House you will find commanded by the battery over the E. Gate and from the old and new South-east bastions within musket shot." And again: "The whole square between the south face of the fort and the hospital, and gate of the burying ground was commanded not only by the New South-east Bastion, but by seven 4-pounders on the new godowns." In section 48 he says: "Accordingly prepared with the flag [of truce] on the original S.-E. bastion where Captain Buchanan was then posted."

¹⁴ I learn this fact from Dr. Busted who has furnished me with the following

plan has every mark of care and accuracy, and, as regards the northern portion of the fort agrees fairly well with what Mr. Bayne discovered in 1883. There is only one suspicious circumstance to be noted here. The north and south alignment of the Governor's House is not parallel to the east curtain. This is *primâ facie* an improbable arrangement.

In the year 1891, all the buildings between the General Post Office and the Custom House were pulled down and the ground dug up for the purpose of laying the foundations of the new Government Offices, Dalhousie Square. As before in 1883, so now, the excavations revealed remains of the strangely fashioned walls of thin brick work which had once formed part of the old fort. In particular the curiosity of the public was much excited by the discovery of a small rectangular chamber faced with hard cement standing in the midst of four larger walls which looked down grimly on it.

At the beginning of September 1891, having made myself acquainted with the main features of the old fort, I went down to see the excavations. Almost the first thing I did was to measure the small rectangular chamber and the space between the larger walls which surrounded it. The small chamber measured east and west 9 ft. 9 in.; the distance between the thick walls east and west was 14 ft. 10 in. These measurements and the general appearance of the walls convinced me that the thick wall on the east was the curtain wall of the fort, that the wall on the west was the wall parallel to the curtain built for the purpose of containing the chambers running along that side of the fort, and that the smaller plastered chamber was a strong-room or godown.

I next identified the remains of the east gate. The walls had been much cut away by the excavations, but enough remained to show their true nature. Moreover, on measuring the distance from the spot where these walls stood to the record plate marking the north-east angle of the fort as determined by Mr. Bayne, I found that it agreed fairly well with the measurements given in the plan.

This discovery of the true position of the east gate was most important, because it settled finally one of the chief disputed points in the topography of the old fort, and it at once became the starting point for further investigations and discoveries. The value and significance of the excavations now became clear to me. If this was the east gate then the

extract from a letter written by Holwell to Bombay, 17th July 1756, when just released from "Muradabad." "The 20th in the morning the enemy formed three assaults at once, against the N.-W. bastion, against the N.-W. Futtoch or barrier, and against the windows of the Laboratory on the eastern curtain, and attempted to scale the North-West window."

mutilated fragments of brick work I had just been touching and measuring were all that remained of the well-known court of guard, barracks and Black Hole, spoken of by Orme and Holwell. West of them was the parade ground where the soldiers of Suráj-ud-daula had been drawn up to keep guard over their captives, and west of this again I should find the foundations of the Governor's House in the Fort. On advancing westward to a distance of about 110 ft. from the east curtain, the walls of the south-east wing of the Governor's House were readily discovered; and after a certain amount of careful excavation its leading features were all ascertained. Meanwhile I was anxiously trying to fix the position of the south curtain wall and the three lines of arches shown in the plan running parallel to the south curtain. The tradition has always been that the old arcade in the yard of the General Post Office was part of the old fort, and although Mr. Bayne had argued that this could not be the case, I felt convinced that tradition was right. I was, however, for a long time baffled in my efforts to prove the truth of the tradition owing to the fact that the actual distances between the lines of the arches of the arcade and the corner of the north-east wing of the factory, which had been discovered, could not be made to agree with the distances shown in the plan between that corner and the lines of arches along the south curtain. It was only after a good deal of excavation that the true position of the south curtain was established, and it became evident that the south face of the old arcade is part of the first line of arches within the curtain, that the pillars in the centre of the arcade belong to the second line of arches, and the north side of the arcade is on the alignment of the third and innermost line of arches.

The settling of this difficulty necessarily led to a further set of investigations. If these were the real positions of the south curtain wall and of the lines of arches within it, it followed that the plan was inaccurate in its representation of this part of the fort. Hence doubts naturally arose as to whether the plan was correct when it represented the east curtain wall as inclined at an angle to the north and south alignment of the Governor's House. It could not but seem more likely that they were parallel. To determine this point, excavations were made in the yard of the Custom House, and by this means the main outlines of the north-east wing of the factory and also the north and south alignment of the main building were ascertained. Here too it turned out that the plan was incorrect.

From this point the work of excavation was comparatively easy. Further investigations cleared up all that was obscure about the south curtain wall, and fixed the position of the block of buildings running east and west dividing the fort into two sections.

The plan given in Pl. VII gives the combined results of the excavations made in 1883 and in 1891. It shows the existing buildings on the site and over them the old fort is drawn. The walls of the darkest tint are the walls discovered by me, those of a lighter tint are walls discovered by Mr. R. R. Bayne. The still lighter tint indicates walls whose position has not yet been verified. In indexing the plan for reference I have tried to follow a uniform system.

I shall now describe the different portions of the fort which have been discovered in 1891, and I shall begin with

The Governor's House in the Fort. "The Factory" or "the Governor's House in the fort," which Hamilton describes is "the best and most regular piece of architecture that I ever saw in *India*." I have dug up as much of the foundations of this "Piece of Architecture" as was possible without disturbing the existing buildings. I think it merits Hamilton's praise. The walls were undoubtedly strong and well-built, the shape of the building is regular and suggests the quadrangle of a college. The main building (*OPQWVT*) faced the river. Its length north and south was 245 ft.¹⁵ In the centre of this face was the great gate of the Governor's House, and from it a colonade ran down to the south water gate of the fort and the principal landing stage. This was the way by which Governor Drake escaped to the ships in 1756. Entering this gate and turning to your left you ascended the great flight of stairs which led, I conjecture, to the hall and the principal rooms. At right angles to the main building, and at each end of it, were wings running back towards the east curtain. Thus these north-east and south-east wings, together with the main building formed three sides of a rectangle having a raised cloister or piazza running all along the three sides. In the centre, I imagine, was a green grass plat. The south-east wing contained the apartments of the governor, and the factors probably had rooms in different parts of the building. Almost the whole of the ground on which the main building stood is at present occupied with government godowns. A trench was, however, dug from east to west in the passage between the opium godowns and the import godowns, and this enabled me to determine the positions of the principal walls, which were uncovered at the places marked $p p_1 p_2$. The wall $p p_1$ is one of the cross walls of the Governor's House forming the north side of the grand staircase. It is three feet thick. At p it meets the west wall of the Governor's House which is 3 ft. 9 in. thick, at p_1 it meets the east wall of the principal building (*PV*) which is 4 ft. 6 in. thick. The internal distance between these two walls is 30 ft. 9 in. At p' the cross wall $p p_1$

¹⁵ There are at least two or three views given in old prints of the west face of this building.

meets on its south side an inner wall 3 ft. thick, parallel to the main west wall of the building, and at p'_1 , it meets a similar wall 3 ft. 9 in. thick. The internal distance between the main west wall and the inner parallel wall at p' is 10 ft. 3 in.; the internal distance between the inner wall at p' and the next one at p'_1 is only 6 ft. 9 in. These inner walls doubtless served to support the grand staircase. The inner wall at p'_1 intersects the cross wall pp_1 and continues on the north side of it. I do not know the reason of this. The wall $O_2p_2R_2$ is the wall which supported the columns of the cloister, or verandah, which ran round the inside of the quadrangle of the Governor's House. It has been uncovered from p_2 to R_2 where it turns to run along the inside of the north-east wing. The wall $O_2p_2R_2$ is 2 ft. 6 in. thick, with an offset of 6 in. at the points where it actually supported the pillars of the cloister. The distance between the pillars of the west cloister, from centre to centre, was 10 ft. 6 in. At p_3 , 4 ft. 6 in. from p_2 , I found a piece of a small wall 1 ft. 6 in. thick. This wall contained the raised terrace on which the cloister stood. There is also at p_2 a wall $p_2p'_2$ which bonds with the wall $R_2p_2O_2$, and which runs back towards, but does not meet, the east wall of the main building PV . The purpose served by this wall $p_2p'_2$ is not clear.

Excavations were also made to find the north-west corner of the factory (W), and the north-east wing (SRR_2S_2). The north-west corner (W) was readily found. The walls here are 3 ft. 6 in. thick. From W the north wall of the factory continues in a straight line for a distance of 50 ft. 3 in., outside measurement, to V . Here it is set back 3 ft. 6 in. From this point (U) the wall again runs on in a straight line for a distance of 18 ft. to T , where it is set back 4 ft. 9 in. ($TR=4$ ft. 9 in.), and thence continues as the north wall of the north-east wing (RSS_2R_2). The wall $WVURS$ is throughout 3 ft. 6 in. thick. V , the point where this wall is first set back, is the north-east corner of the main building, where the wall WV meets the wall VP . The second set-back occurs at the point where the wall UT meets the wall TRR_1 , which runs parallel to VP and forms the east wall of the staircase on this side of the building. The wall TRR is 3 ft. 6 in. thick and 36 ft. long. Woll's plan shows a kind of projection or perch $VV'T'T$ against the wall UT , but of this I found no trace.

RS the main north wall of the north-east wing is 3 ft. 6 in. thick and 61 ft. long. Parallel to it and of the same length are the walls R_1S_1 , R_2S_2 . R_1S_1 is the inner wall containing the apartments in the north-east wing of the Governor's House. It is 3 ft. 6 in. thick, and is distant 21 ft. 9 in., internal measurement, from RS . The remains of SS_1 , the east wall of this wing, are completely buried beneath the Custom House. The smaller walls rr_1 (two feet thick) qq_1 , ss_1 (each

2 ft. 9 in. thick) divide off the space between RS and R_1S_1 . The internal distance between SS_1 and ss_1 is 13 ft. 6 in.; between ss_1 and qq_1 it is 16 ft. 3 in.; between qq_1 and rr_1 it is 13 ft. 6 in.; between rr_1 and RR_1 it is 6 ft. R_2S_2 is the foundation wall carrying the arches of the north cloister. It is 41 ft. distant, internal measurement, from RS .¹⁶ Where it directly supported the pillars of the cloister it is 4 ft. 6 in. thick, elsewhere it is 3 ft. 6 in. thick.

Other excavations were made on the site of the south-east wing of the factory (LL_2O_2O), in which the governor's apartments were situated, and considerable remains of its walls were discovered. The east wall of this wing LL_1L_2 was traced out, as also portions of the south main wall of the wing LO , the inner wall containing the apartments L_1O_1 , and the wall carrying the pillars of the south cloister L_2L_2 . These walls are all 4 ft. thick. The distance of L_1O_1 from LO is 17 ft. 6 in. and that of L_2O_2 from L_1O_1 is 35 ft. At the corner of this wing 17 ft. 6 in. south of L stood an isolated pillar 3 ft. square, L' . There is also a projecting chamber $MNN'M'$ built out against the main wall LO , the walls of which are 3 ft. thick, LM measures 11 ft. 6 in. The chamber $MNN'M'$ measures inside 18 ft. by 23 ft. The distance of L from the east curtain wall is 146 ft., that of S from the east curtain is 143 ft.: thus the north and south alignment of the Governor's House is very nearly parallel to the east curtain.

I now pass on to speak of the south curtain wall and the arcades built within it. This side of the fort was in all probability used for storing the Company's goods. As originally constructed it had only two parallel lines of arches built along the inside of the curtain forming a double arcade and beyond these arcades, (*i. e.*, on their north side) was an uncovered raised terrace 22 ft. broad. Afterwards a portion of this raised platform was covered in by a third arcade. It also seems to have been found necessary to strengthen the south curtain wall by building another wall against it to support it. Lastly, in 1741, export and import wall houses were built on outside the south curtain. Evidently this side of the fort was subject to a good deal of alteration, and for this reason, or it may be from a desire to make the fort appear more symmetrical than it really was, Wells's plan comes far short of its usual accuracy. I have, accordingly, had some difficulty in determining the topography of this side of the fort, but my doubts have all yielded to patient excavation. The key to their solution was the discovery of the third or innermost of the lines of arches parallel to the south curtain.

¹⁶ This seems a little doubtful. The walls were very thick here, with a footing.

After making a careful search in every likely direction where I might expect to come across them, I find that the third line of these arches was built on the alignment of what is now the north face of the waggon shed in the Post Office yard. The foundations of this wall (D_3E_3) have been exposed. It is 2 ft. 6 in. thick and is built against another smaller wall 10 in. thick which is in contact with it, all along its south side but does not bond with it. There can be no doubt about the meaning of this. The smaller wall contained a raised terrace or platform in front of the arcades D_1F_1 , D_2F_2 . This platform was at first left open, but was afterwards covered in by an arcade, and a thick wall was built against the thin wall containing the platform to support the arches of the new arcade. Clearly then this wall D_3E_3 is the foundation wall of the third row of arches parallel to the south curtain. If this be so there can be no doubt about the situation of the curtain and the two other parallel lines of arches, of which in fact portions still remain standing. In the yard of the General Post Office there is an old arcade and arches which at its west end joins on to a very old house. This old house has been lately used as the store-godown of the Post Office, and the arches serve for a shed to keep the Post Office waggons in. The north side of the waggon-shed e_3i_3 is a modern wall constructed on the alignment of the third arcade wall of the old fort D_3E_3 ; but the two lines of arches e_1i_1 , e_2i_2 (of which the first e_1i_1 forms the south face of the shed, and the second e_2i_2 runs down its centre) are manifestly portions of the first and second lines of arches D_1F_1 , D_2F_2 , which ran parallel to the south curtain of the old fort. This agrees with the traditions of the spot and has been proved by my excavations. The arcade e_1i_1 i_2e_2 is a fragment. At its west end I find that four more of its pillars, i_3i_4 F_1F_2 , are built into the old Post Office godown; and on opening up the ground to the east of the arcade I found that the line of arches e_2i_2 has a foundation wall which runs on eastward underground as $e_2e'_2$, and that the line of arches e_1i_1 rests on isolated brick piers which are also continued eastward, and one of which I was able to expose e'_1 .¹⁷ Moreover the arcade e_1i_1 i_2e_2 is a fragment of the old fort. It is built of the old thin bricks, the pillars are sunk deep below the present ground level. The foundation wall which carries the line of arches e_2i_2 is 3 ft. 4 in. thick. The production of this wall e_2i_2 is at a distance of 22 ft. 6 in. internal measurement from the wall D_3E_3 which I have identified as the foundation wall of the third or innermost line of arches parallel to the south curtain. This is just the distance which Wells's plan shows between the third and the second lines of these

¹⁷ It is 3 ft. 7 in. square at the top, and 4 ft. 8 in. square at its base.

arches, and hence I consider that e_2i_2 is a segment of the second line of arches. The pillars of these arches are 13 ft. 8 in. distant from each other from centre to centre. For similar reasons I identify the line of arches $e_1f_1f'_1g'_1i_1$ as segment of the first of the lines of arches within the south curtain. The line of arches e_1f_1 is 19 ft. distant from the line of arches e_2f_2 , by internal measurement. From e_1 to f_1 , a distance of 42 ft. 9 in., it runs straight on parallel to e_2f_2 . Then the whole line of arches is brought out 4 ft. 10 in. farther south ($f_1f'_1$). Then again it continues to run parallel to the wall e_2i_2 for 82 ft. 10 in. ($f'_1g'_1$) after which it returns to its old alignment (g_1i_1). Both as regards its distance from the wall e_2i_2 , which I have argued is the second line of arches parallel to the curtain, and as regards the irregularity of its conformation, the line of arches $e_1f_1f'_1g'_1i_1$ corresponds to the representation given in Wells's plan of the first line of arches within the south curtain, and I think there can be no doubt that it is a segment of that line of arches. Near the south-west corner of the old waggon shed a wall *it* about 9 ft. thick projects in front of and parallel to the arches; another portion of it is hidden away in the old Post Office Store Godown. This is all that actually remains of the south curtain, but by opening up the ground in the yard of the Post Office I have been able to trace out its position and foundations. The original curtain wall was 3 ft. 2 in. thick. Within it, *i. e.*, on its north side, there was built another wall which was intended to support and strengthen the curtain wall. This wall is irregularly constructed and varies in thickness. At first it is about 3 ft. 8 in. thick with a space of 6 in. left in some places between it and the curtain wall. At *f* it ends in a buttress about 2 ft. 4 in. thick. The south curtain wall is met on its south face by a wall about 2 ft. 2 in. broad, at a point *h*, 53 ft. distant from *k* where the curtain is now cut away. The 2 ft. 2 in. wall runs southwards and a little to the eastwards, for a distance of 24 ft. Then it turns off eastwards. This wall is the wall shown in Wells's plan dividing the warehouses from the yard ω . Its discovery in the position indicated for it in Wells's plan places the identification of the south curtain wall beyond dispute.

I have already pointed out one serious inaccuracy in Wells's plan. He makes the east curtain inclined at an angle to the north and south alignment of the Governor's House in the Fort, whereas they really are parallel to each other. I have now to call attention to another serious inaccuracy in Wells's plan. I have shown that D_3E_3 is the northernmost of the three lines of arches built inside the south curtain wall. Its distance from the centre of the east gate is 162 ft., whereas Wells makes it only 150 ft.

As regards the north side of the fort, I have not much to add to what Mr. Bayne discovered in 1883. I have, however, verified by excavation the position of the range of rooms which divided the fort into two, and which, I believe, to have been the 'Writers' Buildings' in the old fort. The south wall of these buildings, JG , is about 60 ft. distant from W , the north-west corner of the Governor's House. At J , 99 ft. from the west curtain wall, there is a passage through the block of buildings 15 ft. wide. The wall JG is 3 ft. 2 in. broad,¹⁸ north of it, and parallel to it, at a distance of 19 ft. internal measurement, is a wall $J_1 j_2$. I also found a cross wall $j_2 j_3$ to the west of $J J_1$ and distant from it 24 ft. internally. These cross walls $J J_1$, and $j_2 j_3$, are 2 ft. 1 in. thick, $J_1 j_2$ is 2 ft. thick. East of the passage we have no continuous wall corresponding with JG , but we find instead the bases of a row of columns YZ . These bases are 11 ft. apart from centre to centre, and measure about 3 ft. by 2 ft. each. At a distance of 9 ft. internally from the row of columns and parallel to it, is an inner wall $Y_1 Z_1$, 2 ft. thick. The wall $Y Y_1$ is 2 ft. 8 in. thick. I have not thought it necessary to trace out the walls YZ , $Y_1 Z_1$, along their whole length. I have merely exposed Z_1 , the termination of the wall $Y_1 Z_1$, where it meets the wall $Z_1 Z$. The south face of the wall $Y_1 Z_1$ is here 22 ft. 6 in. distant from the wall of the present Custom House. Z_1 is also about 190 ft. from the centre of the east gate of the fort, and 30 ft. from the east curtain wall by internal measurement. The whole length of wall $Y_1 Z_1$ internally is 174 ft. 6 in. The breadth of $Y_1 Z_1$ and $Z Z_1$ is 2 ft. All these walls are of poor construction. The buildings here were, in fact, low, one-storied structures, as is evident from the old views of the fort. This also agrees with the supposition that they were inhabited by the writers, for we gather from the records¹⁹ that their lodgings were very damp and unhealthy.

As regards the west curtain I have little to say. Its alignment was determined by Mr. Bayne. I have verified it by excavation at three different spots X_1 , X_2 , X_3 . At X_1 near the south-west bastion of the fort, the curtain wall is unusually thick and measures 6 ft. This is probably due to the same cause which led to the strengthening of the south curtain wall in this direction.

¹⁸ I have not been able to trace this wall westwards from J for more than about 40 ft. At this point the remains became very confusing. I could only find a small wall 1 ft. 10 in. broad which met the thicker 3 ft. 2 in. wall on its northern face, and which I traced westwards up to the west curtain.

¹⁹ See a letter from the Court of Directors, February 11th, 1756, para. 69, in Long's *Selections*.

It now remains for me to speak of the east side of the fort. The central line of the east gate is 427 ft. from

The East Gate and the east side of the fort.

the corner of the north-east bastion, the position of which was fixed by Mr. Bayne in 1883. the gate measures internally 20 ft. from north to south and 36 ft. from east to west. The east face measures externally 26 ft. 6 in. Its salient angles $B' B' C'$, $B' C' C$ are angles of 120 degrees. The walls are 4 ft. thick. The south wall of the gate $C' C_1 C_2$ was pierced by a drain which was met at an angle by a second drain running north-east.

On each side of the east gate there ran a double row of arches $A_1 B_1$, $A_2 B_2$, and $C_1 D_1$, $C_2 D_2$, parallel to the east curtain wall AB , CD . The space between the curtain wall and the line of arches next to it (*i. e.* between AB and $A_1 B_1$ and between CD and $C_1 D_1$) was divided up by cross walls into chambers. The second row of arches $A_2 B_2$, $C_2 D_2$ supported the verandah or piazza which extended on each side of the gate before the ranges of chambers.

As regards the rooms to the north of the gate between the east

The rooms north and south of the gate.

curtain and the line of arches $A_1 B_1$, there is little to say. Wells's plan shows that the first cross wall occurred after the fifth arch. The arches thus cut off were left open to the verandah and formed the north court of guard. But the whole interest of these investigations centres in the topography of the range of rooms on the other side of the gate where were situated the court of guard, the barracks, and the Black Hole spoken of by Orme and Holwell. There is no doubt about the position of the curtain wall (CD) and the parallel lines of arches within it ($C_1 D_1$, $C_2 D_2$). They have been traced out from the east gate right up to the north face of the General Post Office. The curtain wall CD is 3 ft. 9 in. thick. The foundation wall which carried the first line of arches $C_1 D_1$ is 2 ft. 9 in. thick, that which carries the second line of arches $C_2 D_2$ is 2 ft. 3 in. thick. Between the curtain wall and the wall $C_1 D_1$ is a distance of 14 ft. 10 in. and between the curtain and $C_2 D_2$ a distance of 31 ft. 3 in. from inside to inside. The wall $C_2 D_2$ meets the wall $D_3 E_3$ at a distance of 162 ft. from the centre of the east gate. So far the topography of this part of the fort is perfectly clear.

There is, however, considerable difficulty in determining the posi-

The cross walls south of the gate.

tions of the cross walls which sub-divided the space between CD and $C_1 D_1$ into rooms. Here, as I noticed before, Wells's plan is quite inaccurate. It shortens the distance between the east gate and the south-east

bastion, and so vitiates its whole representation of this corner of the fort. In the case of the cross walls it is not easy to check the errors of the plan by actual excavation, for we cannot always expect to find trace of the cross walls which may have been very slightly constructed. As a matter of fact only two cross walls have been actually discovered by excavation. One of these dd_1 , was found by Mr. Bayne in 1883 and was again brought to light by me in 1891. This wall is 1 ft. 6 in. thick, and is 145 ft. 6 in. from the centre of the east gate. Mr. Bayne thought that this wall was the north wall of the Black Hole, I shall show that it is probably the south wall of the prison. The other cross wall (bb_1) is a much more solid wall than the wall just described (dd_1). It is 2 ft. thick and is at a distance of 100 ft from the centre of the gate.

The position of two other cross walls may be inferred in the following way. A little to the south of cross wall bb_1 there was a subterranean chamber or vault $b'b'_1c'_1$ which attracted much notice when it was first discovered. Internally this vault measured 19 ft. 3 in. north and south, by 9 ft. 9 in. east and west. It was 7 ft. 2 in. deep. Its walls were 1 ft. 6 in. thick and were covered with a hard coating of plaster. The floor over the vault was carried across by four beams, the holes where the ends of the beams rested being clearly visible. The west wall of the vault ($b'_1c'_1$) was built against the foundation wall of the first line of arches C_1D_1 . The north face of the north wall of the vault $b'b'_1$ was 3 ft. 3 in. distant from the south face of the cross-wall bb_1 . The internal distance between the east wall of the vault ($b'c'$) and the curtain was 2 ft. 3 in. In this part of the curtain wall (bc) an iron grating was found, built up inside the brick work of the wall just below the level of the floor. It seems to have served no special purpose. The south wall of the vault c'_1 was coated with plaster on both sides. Its north face was plastered down to the level of the floor of the vault. Its south face was plastered down to a foot below the level of the floor of the chambers along the east curtain. This would seem to show that wall c'_1 was continued up above the floor level so as to form a cross wall cc_1 dividing up the space between bb_1 and dd_1 , and, I believe, that this was so because there must surely have been a cross wall between bb_1 and dd_1 , and I do not see where else it could have been conveniently placed except above c'_1 as cc_1 . The north face of this wall will be distant 126 ft. from the centre of the east gate.

There is somewhat similar evidence for the existence of another cross wall aa_1 north of bb_1 . Inside the curtain wall (at ab) there was built another wall $a'a'_1$ 1 ft. 6 in. and 24 ft. long which was carried up to within a foot of the floor level of the range of chambers along the

east curtain. This wall and the north face of the wall bb_1 were plastered to a depth of about 7 ft. below the floor level almost to the foundation of the walls. This seems to show that there was another vault immediately north of the wall bb_1 , and that the wall $a'a'_1$ carried the flooring of the room above. As the wall $a'a'_1$ is about 24 ft. long, I infer that this was the length of the vault and also of the room above it and, I think, that at 24 ft. north of bb_1 there was another cross wall like bb_1 which below the floor level served as the north wall of a vault and above the floor level was a cross wall sub-dividing the space between the curtain and C_1D_1 .

In this way I have been able to prove by excavation the existence of four cross walls aa_1 , bb_1 , cc_2 , dd_1 . But this is not enough. It is still necessary to consider whether, as Wells's plan implies, there were any other walls besides these four, and in particular whether there were any to the south of dd_1 . For the Black Hole was the southernmost of the rooms built along this part of the east curtain. Consequently its site must be immediately to the north of the last cross wall, and its site is known if the position of the southernmost cross wall is known. I have accordingly traced out the wall C_1D_1 , which contained the chambers built against this part of the east curtain, to a point d'_1 , 166 ft. from the centre of the east gate, where this containing wall stops. Beyond d'_1 there is only a small thin wall, built, I suppose, to contain a pavement. There could have been no cross walls beyond d'_1 , and I have found no trace of any between d_1 and d'_1 . It therefore follows that dd_1 is the southernmost cross wall. I have also traced out the east verandah wall C_2D_3 to D_3 , 166 ft. from the centre of the east gate, where C_2D_3 meets the wall D_3E_3 which carried the third or innermost line of arches on the south side of the fort. Thus my excavations prove that dd_1 is the southernmost cross wall, and that it occurred at about 20 ft. north of the end of the containing wall C_1D_1 , and also at about the same distance north of the junction of the verandah wall C_2D_3 with the third line of arches on the south side D_3E_3 .

This also agrees on the whole with Wells's plan which represents

Comparison of Wells's plan with the results of excavation.

the last cross wall as occurring about 16 ft. or 18 ft. north of the end of the containing wall and of the junction between the east verandah wall and the inner line of arches on the south side of the fort. Wells's plan, however, does not exactly agree with the results obtained by excavation as to distances, but this is accounted for by the fact that the length of the curtain wall between the east gate and the south-east bastion is too short by about 12 feet. Whoever it was, who actually drew the plan, he did not discover his

mistake till he came to put in the details of the rooms along the east curtain south of the gate. Then, finding that there was not sufficient room to put those details in properly, he crowded them in together. This, I think, is clearly the case with the cross walls. The discrepancies between Wells's plan and the results obtained by actual excavation may be exhibited as follows :—

Wells's plan shows walls at	43, 70, 95, 108, 122, 135 ft.	}	from the centre of
Excavation shows walls at	75, 100, 126, 146 ft.	}	the East gate.

Looking at this comparative table, and remembering that Wells's distances are short of the true distances, we easily discover which walls correspond. The first cross wall shown by excavation (aa_1) corresponds to the second wall given in Wells's plan. The second cross wall shown by excavation (bb_1) corresponds to the third wall in Wells's plan. The fourth cross wall shown by excavation (cc_1) corresponds to the fifth wall in Wells's plan; and the last wall in Wells's plan corresponds to the last wall shown by excavation. The two missing walls not shown by excavation are the first cross wall of Wells's plan, which was the south wall of the barracks (μ), and the fourth wall of Wells's plan which must have come between bb_1 and cc_1 . This wall could not have been a very substantial one, as it must have been built over the subterranean chamber $b'b_1'c_1c_1'$. The room π in Wells's plan, which is the southernmost of the series of rooms built within this part of the east curtain, and is, therefore, the Black Hole, corresponds with the space $cc_1 dd_1$. This is the site of the Black Hole. As regards the staircase to the south-east bastion, I have unfortunately very little to say. This staircase is mentioned by Holwell and is shown by Wells in his plan. It is a long staircase. Its head is put by Wells at about 8 ft. from the south face of the southernmost cross wall, and its foot at a distance of about 50 ft. I have not been able to find any trace of it by excavation, but I see no reason for doubting its position to be correctly marked by Wells.

If I might be permitted to make a few conjectures I should arrange the rooms along the east curtain thus. The whole range of rooms is contained between the south wall of the east gate CC_1C_2 and the cross wall dd_1 and between the east curtain CD and the first line of arches parallel in the curtain C_1D_1 . The pillars of these arches were about 8 ft. 9 in. distant from each other from centre to centre. West of them came a second parallel line of arches, C_2D_2 forming the piazza before the rooms. The first of the cross walls dividing off the rooms occurred after the fourth arch in the first line of arches C_1D_1 . Thus it would be about 35 ft. distant from the wall CC_1C_2 . These four arches were left quite open to the

piazza west of them, and formed the court of guard south of the gate. Three arches further on was another cross wall aa_1 . If this wall occurred exactly after the seventh of the first line of arches C_1D_1 and I am right in believing that these arches measured 8 ft. 9 in. from centre to centre, then the centre of the cross wall aa_1 would be 61 ft. 3 in. from the south face of the wall CC_1C_2 . If we rely on the evidence of the excavations its north face was 60 ft. 3 in. from the south face of CC_1C_2 . The next cross wall bb_1 occurred after the tenth arch. As shown by the excavations its north face was 86 ft. distant from the south face of the wall CC_1C_2 , or if we reckon its distance according to the arches, its centre will be 87 ft. 6 in. from CC_1C_2 . I have argued that another cross wall cc_1 was 126 ft. distant from the centre of the east gate, that is its north face is 112 ft. from the south face of CC_1C_2 ; and if we reckon that this wall came after the thirteenth arch its centre will be 113 ft. 9 in. from CC_1C_2 . The last cross wall dd_1 is 131 ft. 6 in. from CC_1C_2 , or if we reckon that it came after the fifteenth arch its centre would be about 131 ft. 3 in. distant. The room cut off by the walls cc_1, dd_1 , is the Black Hole. It measured internally 18 ft. by 14 ft. 10 in. It was bounded on the east by the curtain, on the south by the wall dd_1 , on the north by the wall cc_1 , and on the west by the fourteenth and fifteenth arches of the first line of arches parallel to the east curtain C_1D_1 . These two arches were bricked up and only a window was left in the centre of each. Along the east wall of the Black Hole was a wooden platform about six feet broad and raised three or four feet from the ground, open underneath. It probably projected from the east wall as far as the door in the north wall cc_1 . This door opened inwards. The three rooms between the court of guard and the Black Hole were the barracks. They were bounded on the east by the curtain wall, along which ran a wooden platform similar to that in the Black Hole. The nine arches which bounded the barracks on the south, (*i. e.*, the fifth to the thirteenth arches inclusive) were partially closed by a dwarf wall, or, as Holwell calls it, a parapet wall. The rooms opened one into another and a door in the wall cc_1 led to the Black Hole. South of the Black Hole there were no more rooms, the remaining space being taken up by a straight staircase, fifty feet long, built against the east curtain wall, leading to the south-east bastion.

I believe that this arrangement of the rooms will satisfy all the requirements of Holwell's narrative. The barracks according to him would have been a fairly comfortable place for 146 persons to spend the night in. I make the whole area of the barracks to be 72 ft. by 14 ft. 10 in. This gives 7 sq. ft. 45 sq. in. for each individual. The area of

Black Hole is 18 ft. by 14 ft. 10 in. This allows just 267 sq. ft. of area for 146 persons, or less than 2 sq. ft. each.²⁰

The result of all this fresh discussion is to place the site of the Black Hole prison immediately to the north of the site fixed for it by Mr. Bayne, so that Mr. Bayne's conclusion was not so far wrong. Mr. Bayne, however, arrived at his conclusion from two utterly false premises. His first premise was that the south-east corner of the fort was just like the north-east corner. This was completely refuted by Mr. Munro in 1889 when he produced Wells's plan of the fort. Mr. Bayne's second premise was, that the dimensions of the fort stated by Orme in the text of his history and shown in the accompanying plan, were absolutely correct, and Mr. Bayne still held to this belief even though he discovered that there was an error somewhere in Orme's plan when he tried to superpose it upon Simms's Survey of Calcutta. The excavations which I have made prove that the dimensions given by Orme are only approximately correct, accurate enough for the purposes of his history, but not accurate enough for the purpose of settling minute points of topography. Fortunately for Mr. Bayne, the errors of his two premises counteracted each other, and thus, when he made an excavation in the passage north of the General Post Office, where he expected to find the Black Hole, he actually did come across one of its walls. But, like words, walls cannot be interpreted apart from their context. Mr. Bayne was prevented at the time from finding the right context, and he therefore failed to understand these walls; I have merely been more fortunate in my opportunities, and have been able to secure the right context.

Only a few more miscellaneous points as to the topography of the old fort remain to be mentioned. Besides the two drains already spoken of, which I found by the east gate, I also came across a piece of another old surface drain running along the west side of the verandah which extended before the chambers built inside the east curtain. This drain is 4 ft. wide at the top and 2 ft. at the bottom. Its eastern edge is 5 ft. distant internally from the verandah wall C_2D_2 . There is also an old well about 50 ft. east of the east wall of the Governor's House in the fort, and 23 ft. south of its central line, which may have been part of

²⁰ The only cross wall shown in Wells's plan which I have not accounted for is the wall between the rooms ν and σ . If what I have said as to the other cross walls is correct, this cross wall should come between bb_1 and cc_1 . It could not then have been a substantial wall as it would have been built over the subterranean chamber $b'b'_1c'_1$. Could this wall have been meant for the wall $b'b'_1$?

the old building. The main walls of the buildings are brick in lime, the minor walls are brick in mud. The parade ground is paved with brick on edge over one flat, covered with six inches of concrete. Its level was visible everywhere in section. If we reckon the level of the curb stone of the footpath in Dalhousie Square as 100 ft. then the level of the parade ground would be 98·07 ft., *i. e.*, a little less than 2 ft. lower down. The level of the floors of the rooms varied. The level of the floor over the subterranean vault was 99·24 ft. At about the middle of the set of rooms built along the east curtain it was 98·5 ft.

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*A Specimen of the Padumāwati.—By*

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The following is an attempt to give a correct text of a portion of the Padumāwati,<sup>1</sup> or Padmāvati of Malik Muḥammad of Jāyas in Oudh. He flourished under Shēr Shāh in the year 1540 A. D., and numerous MSS. of his great poem are in existence.

The value of the Padumāwati consists chiefly in its age. Malik Muḥammad is, I believe, the oldest vernacular poet of Hindūstān of whom we have any uncontested remains. Chand Bar'dāi was much older, but the genuineness of his Prithirāj Rāy'sā is denied by many competent scholars. Vidyapati Thākur, who lived in the year 1400 A. D. has only left us a few songs which have come down to us through five centuries of oral transmission, and which now cannot be in the form in which they were written. The preservation of the Padumāwati is due mainly to the happy accident of Malik Muḥammad's religious reputation. Although profoundly affected by the teaching of Kabīr, and familiarly acquainted with Hindū lore, and with the Hindū Yōga philosophy, he was from the first revered as a saint by his Muḥammadan co-religionists.

He wrote his poem in what was evidently the actual vernacular of his time, tinged slightly with an admixture of a few Persian words and idioms due to his Musalmān predilections. It is also due to his religion that he originally wrote it in the Persian character, and hence

<sup>1</sup> The author himself invariably spells the word thus.